COGNITIVE SYSTEMS RESEARCH

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DESCRIPTION

Cognitive Systems Research is dedicated to the study of human-level cognition. As such, it welcomes papers which advance the understanding, design and applications of cognitive and intelligent systems, both natural and artificial.

The journal brings together a broad community studying cognition in its many facets in vivo and in silico, across the developmental spectrum, focusing on individual capacities or on entire architectures. It aims to foster debate and integrate ideas, concepts, constructs, theories, models and techniques from across different disciplines and different perspectives on human-level cognition. The scope of interest includes the study of cognitive capacities and architectures - both brain-inspired and non-brain-inspired - and the application of cognitive systems to real-world problems as far as it offers insights relevant for the understanding of cognition.

Cognitive Systems Research therefore welcomes mature and cutting-edge research approaching cognition from a systems-oriented perspective, both theoretical and empirically-informed, in the form of original manuscripts, short communications, opinion articles, systematic reviews, and topical survey articles from the fields of Cognitive Science (including Philosophy of Cognitive Science), Artificial Intelligence/Computer Science, Cognitive Robotics, Developmental Science, Psychology, and Neuroscience and Neuromorphic Engineering. Empirical studies will be considered if they are supplemented by theoretical analyses and contributions to theory development and/or computational modelling studies.

Topics of relevance for Cognitive Systems Research include: Action Artificial Life Attention Cognitive architectures Cognitive development, including: Language acquisition Socio-emotional development Self-development Attention and memory Complex systems Concepts and categories Consciousness and the Self (including subjective experiences) Creativity Decision-making Emotion Evolution Goal and value systems Human-computer interaction Hybrid and neural-symbolic systems Intelligent agents Interactive behavior Language and thought Language comprehension and understanding, including: Semantics Pragmatics Learning, including: Curiosity-driven learning Life-long learning Meta-learning Self-regulated learning Skill acquisition Statistical learning Machine learning Memory Meta-Cognition Pattern recognition Perception Problem-solving Reasoning, including: Analogy Case-Based Reasoning Causal Reasoning Commonsense Reasoning Spatial Reasoning Scene and sketch understanding Social cognition Spatial cognition Speech recognition Theory of Mind Theoretical cognitive science, including: Distributed cognition Situated cognition Externally-supported cognition Representation.
Formal methods applied to the study of cognitive systems, including: Complexity theory Information theory

Additionally, Cognitive Systems Research plays a special role in fostering and promoting the 'BICA Challenge' to create a real-life computational equivalent of the human mind by devoting two special issues to BICA AI (Brain-Inspired Cognitive Architectures for Artificial Intelligence) related topics each year.

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